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First record of predation on *Pterophyllum scalare* (Osteichthyes: Cichlidae) by *Acestrorhynchus falcirostris* (Osteichthyes: Acestrorhynchidae)

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ABSTRACT

Piscivorous fish are chain top predators in freshwater ecosystems. Thus, predation of forage fish by top fish in the food web is an expected but not always recorded event. This study reports for the first time the predation on *Pterophyllum scalare* by *Acestrorhynchus falcirostris.*

Keywords: Amazon basin; fish; foraging; predation.

Primeiro registro de predação de *Pterophyllum scalare* (Osteichthyes: Cichlidae) por *Acestrorhynchus falcirostris* (Osteichthyes: Acestrorhynchidae)

RESUMO

Peixes piscivorus são predadores de topo de cadeia em ecossistemas de água doce. Assim, a predação de peixes forrageiros por peixes do topo na cadeia alimentar é um evento esperado, mas nem sempre registrado. Este estudo relata pela primeira vez a predação de *Pterophyllum scalare* por *Acestrorhynchus falcirostris.*

Palavras-chave: Bacia amazônica, peixes, forrageamento, predação.

The ichthyofauna of the South America present the largest number of fish species worldwide, comprising 5.160 species represented by 739 genera (REIS et al., 2016). Fish fauna of Amazon basin is the most diversified of South American continent (JUNK et al., 2007; REIS, 2013; REIS et al., 2016), and this species diversity have a wide variation of mouth that reflect in a variety of feeding habits (WIMBERGER, 1992; GERKING, 1994; ABELHA et al., 2001). Thus, fish differ in relation to type of food consumed, more than any other group of vertebrates.

Freshwater tropical teleost specie show considerable trophic plasticity. Mostly, they are euriphagic, i.e, ingest a high variety of food items, changing the diet preference as soon as there are changes in lunar phases, ontogenetic stage, variable spatial and temporal availability of food (ABELHA et al., 2001; HANSON, 2008; AGOSTINHO et al., 2009). *Acestrorhynchus falcirostris* Cuvier, 1819 (Acestrorhynchidae), a pelagic, sedentary and diurnal fish, has distribution in many habitats as seasonal wetlands, creeks, lakes and flooded forests on Amazon, Orinoco, Paraná, São Francisco and Paraguay river basins (MENEZES, 2003; FROESE; POULY, 2018). This fish has an elongate and flattened body with 40.0 cm of total length. Females reach sexual maturity measuring 14 cm of total length (SOARES, 2011). It is piscivorous, feeding almost exclusively on fish, but shrimps are also part of its diet. In addition to fish, young individuals ingest invertebrates (SOARES, 2011; NEVES DOS SANTOS et al., 2007). As the fish species are a part of many food webs, is important identify how they interact in ecosystems.

Here, we report by the first time in *A. falcirostris* containing adult *Pterophyllum scalare* Lichtenstein, 1823 (Cichlidae) in its stomach. During survey in a rapid fish assessment, we captured the fishes at Bintuba stream, a tributary of Jari River, State of Pará, northern of Brazil (1.187214°S; 51.978569°W) (Figure 1). In January 2018, one *A. falcirostris* (total length 26.0 cm; weight 134 g) was collected using 15.0 m-long gillnets with 15.0 mm and 20.0 mm meshes (Figure 2A). Following collection, the specimen was observed with ventral region larger than normal for this species. The posterior dissection of *A. falcirostris* revealed one partially digested adult of *P. scalare* (total length 7.0 mm; weight 6.0 g) in stomach (Figure 2B). The body plan pattern was still recognizable that permitted the species identification based on specialized literature (QUEIROZ et al., 2013). The both specimens were initially preserved in 10% formalin and then stored in 70% ethanol.

It has been reported the presence of fish and fish remains (e.g. Acestrorhynchidae, Anostomidae, Cichlidae, Crenuchidae, Characidae, Curimatidae, Engraulidae, Gymnotidae, Parodontidae, Prochilodontidae, Serrasalmidae, Triportheidae e Lebiasinidae) not identified in diet of *Acestrorhynchus* spp. (HAHN et al., 2000; KRINSKI, 2010; ROCHA et al., 2011; SÁ-OLIVEIRA et al., 2014)). However, this is the first report of *A. falcirostris* preying *P. scalare*.

Finally, despite abundant of *A. falcirostris* in Amazon, previous knowledge on the diet of this fish been little reported. This knowledge may contribute to understanding of its trophic biology and management of aquatic resources of *A. falcirostris*, as well as clarifying the life cycle of endoparasite species that are component of fauna of this piscivorous host (HOSHINO et al., 2016; FERNANDES et al., 2017).

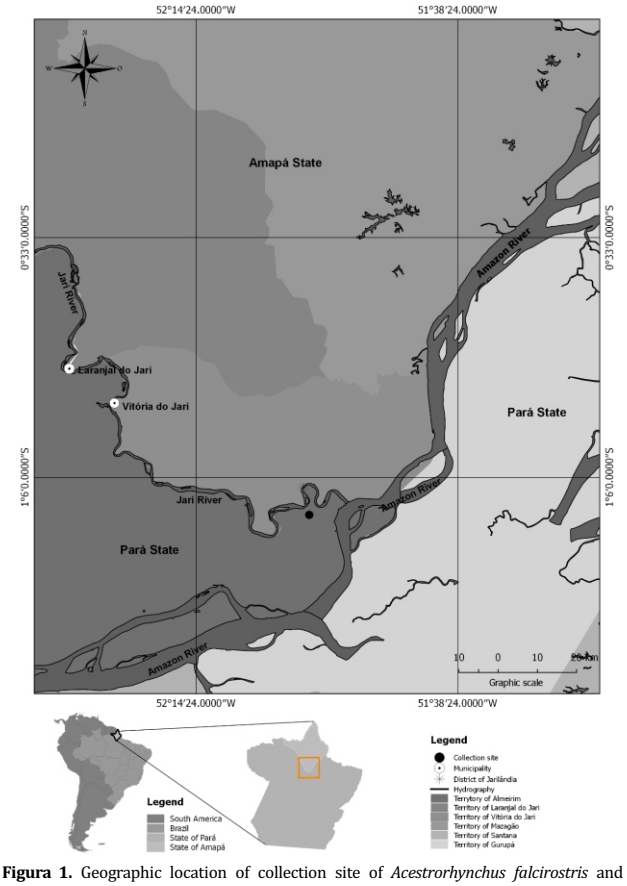

Figura 1. Geographic location of collection site of *Acestrorhynchus falcirostris* and *Pterophyllum scalare* in the Jari River, eastern Amazon, Brazil.

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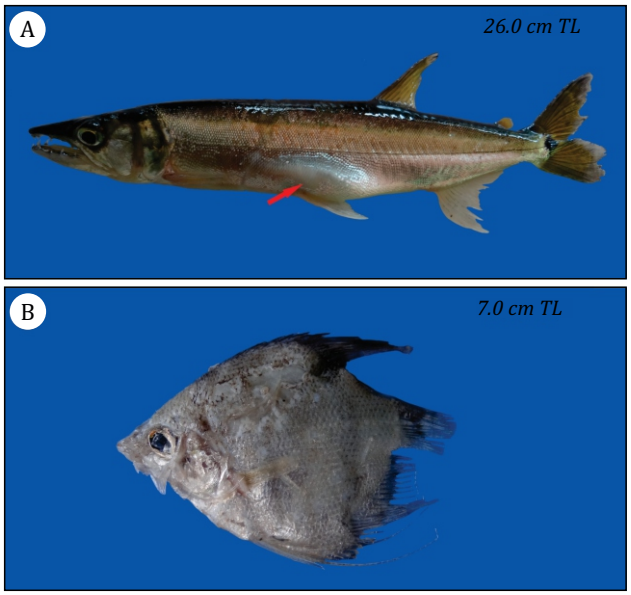

Figure 2. A. Individual of *Acestrorhynchus falcirostris*. B. Adult of *Pterophyllum scalare*. Red arrow shows protrusion in ventral region of *A. falcirostris*. TL: Total length.

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